

**Time:** 1:30:00 PM - 1:36:00 PM

**Presenter:** Andrew Moriarity, MD

**Title of Abstract:** **How appropriate are routine inpatient imaging requests? Comparing baseline inpatient imaging requests with the current ACR Appropriateness Criteria.**

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**Modality:** CT

**Organ System:** Multi

**Intro:** We will 1) describe how commonly ordered examinations are evaluated for appropriateness according to criteria established by the American College of Radiology (ACR); 2) identify the techniques to analyze imaging requisitions for appropriateness and implement systems to ensure that evidence-based criteria, when available, are utilized; and 3) examine requests from our inpatient services for appropriateness.

**Purpose:** ACR Appropriateness Criteria (AC) exist for 183 clinical scenarios in 22 specialty areas. These consensus opinions of recognized experts and stakeholders are based on currently available evidence. Computerized radiology order entry (CROE) systems allow greater integration of decision support (DS) systems, which is often based on AC. Radiation and cost savings are predicted through increased use of DS. We examine how closely the provided clinical information from our inpatient service matches current AC for the requested examination.

**Methods Used:** All CROE requests for advanced imaging by the inpatient services were collected for 6 months prior to implementation of DS (11/1/2011-4/1/2012). Providers selected a 'relevant clinical scenario' and 'signs and symptoms' from a pull-down menu during CROE. An AC score (1-9) was generated but not displayed. If no supporting AC guidance document was available or providers selected 'Other' in the pull-down menus, requests were not scored. Subsequent protocolling did not alter the initial score. Scores were analyzed by the referring service.

**Results of Abstract:** There were 41,132 inpatient requests for advanced imaging during the study period, 26.3% (n=10,833) were scored by the DS algorithm and had an average AC score of 7.2. Providers chose 'other' for 70.1% (n=28,823) of all requests and provided free text clinical history that was not captured by the DS. An additional 3.6% (n=1475) of requests had matching AC but no score for the requested modality/protocol. To evaluate requests with only free text, all exams from March 2012 (n=5,239) were examined using the same AC guidance documents. Of these, 1351 (25.8% (n=1,351) were initially captured by DS with an average score of 7.1, 73.5% (n=3,851) were not scored and 0.7% (n=37) had no matching AC. After manual rescoring the average score of requested exams was 7.3. Differences among subspecialty services are discussed.

**Discussion:** Examinations with an applicable AC had an average score of 7, "Usually appropriate" per ACR definitions. The range of scores encompassed all possible values from 1, "Usually not appropriate," up to the maximum score of 9. We discuss variances from AC with regard to modality, clinical history/scenario, and provider specialty. We also identify multiple common clinical scenarios for which there is no current AC.

**Scientific and/or Clinical Significance?** Significant baseline variations from ACR exist, there are potential radiation and cost savings among inpatient examinations if DS can improve AC adherence.

**Relationship to existing work** There is little data regarding baseline appropriateness of examinations ordered on inpatients